COMPACT DISC PLAYER

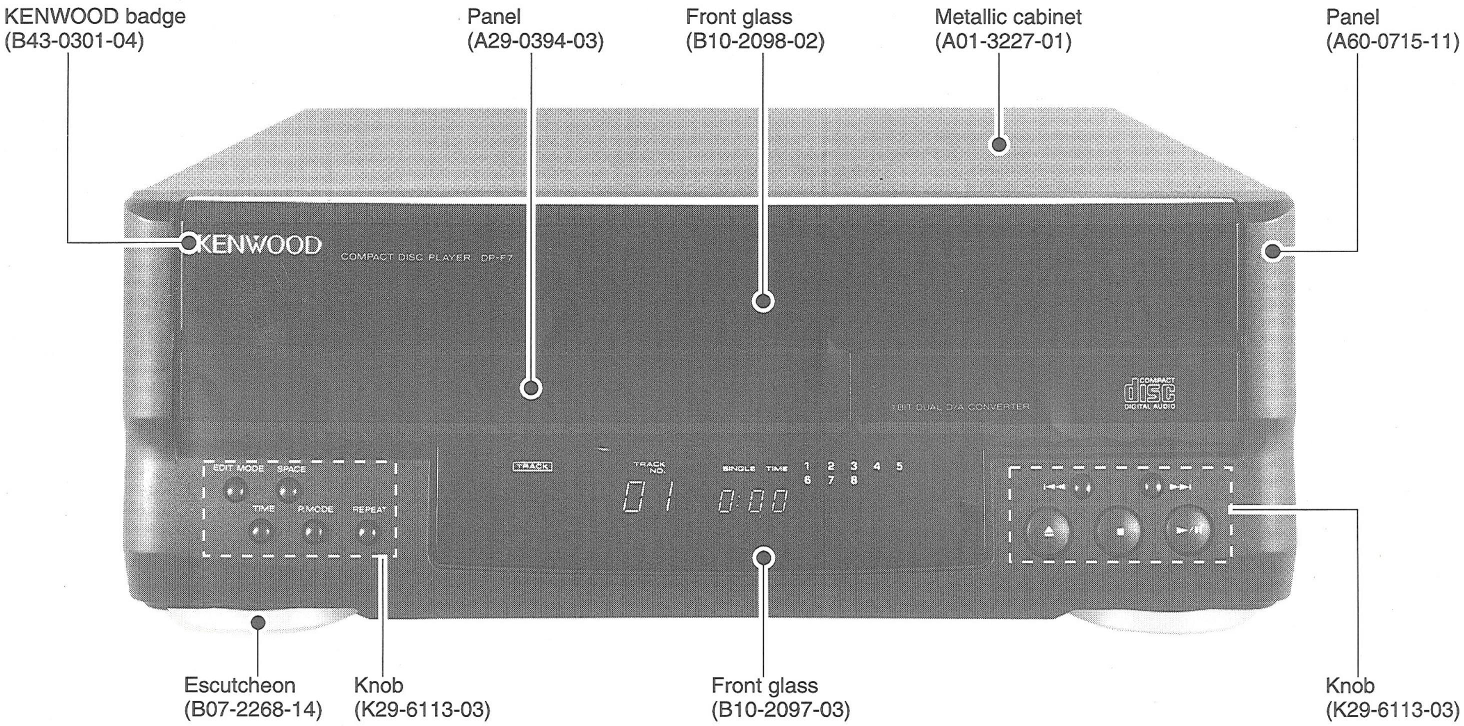
DP-F7

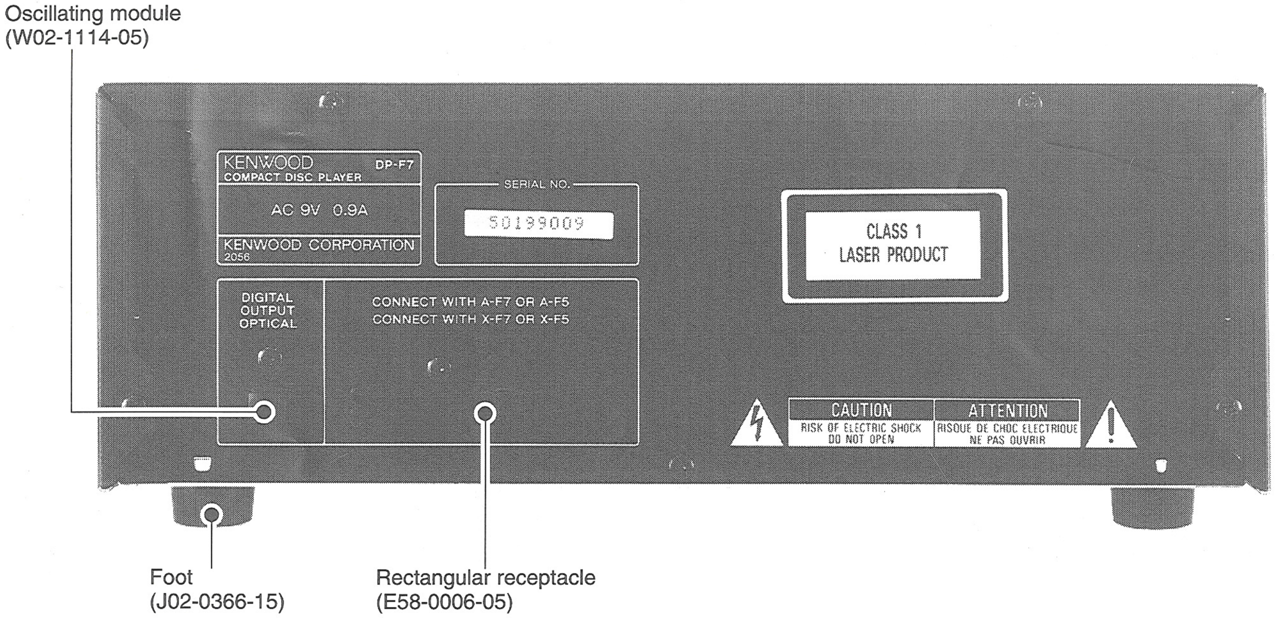
SERVICE MANUAL

(UD-503/613/703/713)

KENWOOD

© 1995-4 PRINTED IN KOREA
B51-5035-00 (K) 2604


KENWOOD badge (B43-0301-04)
Panel (A29-0394-03)
Front glass (B10-2098-02)
Metallic cabinet (A01-3227-01)
Panel (A60-0715-11)
Escutcheon (B07-2268-14)
Knob (K29-6113-03)
Front glass (B10-2097-03)
Knob (K29-6113-03)


Oscillating module (W02-1114-05)
Foot (J02-0366-15)
Rectangular receptacle (E58-0006-05)

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.

PRECAUTIONS FOR REPAIR

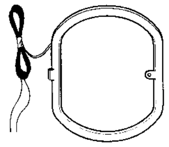
DP-F7 does not have a power supply transformer. Use **A-F5**, **A-F7** or **PS-94UA** power supply to supply power.

CONTENTS / ACCESSORIES

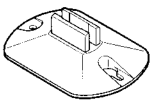
CONTROLS 3
DISASSEMBLY FOR REPAIR 3
BLOCK DIAGRAM 4
CIRCUIT DESCRIPTION 5
ADJUSTMENT 7
PC BOARD 9
SCHEMATIC DIAGRAM 11
EXPLODED VIEW (MECHANISM) 15
EXPLODED VIEW (UNIT) 16
PARTS LIST 17
SPECIFICATIONS ....Back cover

Accessories (Speaker cords are packed with the Speakers. All other accessories are packed with the Tuner unit.)

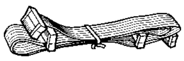
AM loop antenna assy (1)
(T90-0195-05)



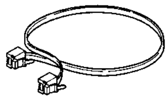
Loop antenna stand
(J19-3645-05)



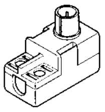
Parallel cord (Thick :1, Thin :1)
(E30-2738-05)



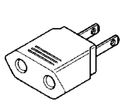
(E35-1063-05) C-F7 only



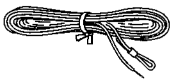
Antenna adaptor (1)
(T90-0198-05)
TEG type only



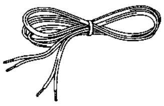
AC plug adaptor (1)
(E03-0115-05)
M type only



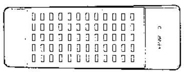
FM indoor antenna (1)
(T90-0801-05)



Speaker cord (2)
(E30-5120-08)

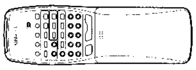


Remote control unit (1)
(A70-1015-05 : RC-F5)



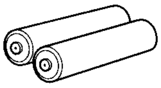
Battery cover : (A09-0106-08)

(X94-1070-00 : RC-F7)



Battery cover : (F07-0721-33)

Batteries (R6/AA) (2) RC-F5
(R03/AAA) (2) RC-F7



System configuration (For parts no. of INSTRUCTION MANUAL, refer to the list on Back cover.)

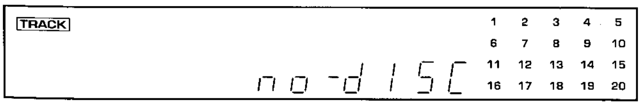
System	Amplifier	Tuner	CD Player	Deck	Speaker	System Carton Box (Parts Mo.)
UD-703	A-F7	C-F7	DP-F7	X-F7	LS-F5 (KP) / LS-F7 (Other)	--
UD-753	A-F7	C-F7	DP-MF7	X-F7	LS-F5 (KP) / LS-F7 (Other)	H60-0307-04 (K) / H60-0306-04 (PR)
UD-713	A-F7	C-F7	DP-F7	X-F7	LS-F7	H60-0304-04
UD-763	A-F7	C-F7	DP-MF7	X-F7	LS-F7	H60-0343-04
UD-503	A-F5	C-F5	DP-F7	X-F5	LS-F5	--
UD-553	A-F5	C-F5	DP-MF7	X-F5	LS-F5	H60-0309-04 (K) / H60-0308-04 (PR)
UD-613	A-F5	C-F5	DP-F7	X-F5	LS-F5	H60-0305-04
UD-663	A-F5	C-F5	DP-MF7	X-F5	LS-F5	H60-0344-04

Caution

Note related to transportation and movement

Before transporting or moving this unit, carry out the following operations.

1. Turn the power ON but do not load a disc.
2. Wait a few seconds and verify that the display shown appears. Wait further a few seconds.
3. Turn the power OFF.



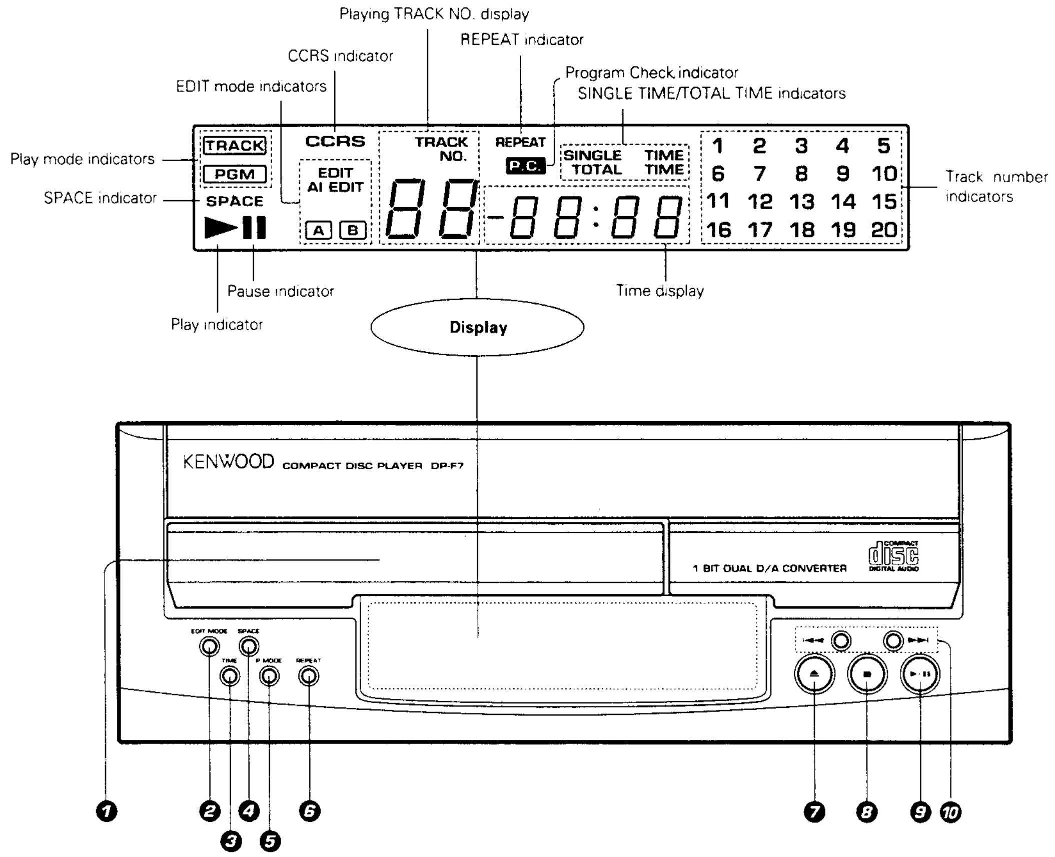
Beware of condensation

When water vapor comes into contact with the surface of cold material, water drops are produced. If condensation occurs, correct operation may not be possible, or the unit may not function correctly. This is not a malfunction, however, and the unit should be dried. (To do this, turn the POWER switch ON and leave the unit for several hours.)

Be especially careful in the following conditions:

- When the unit is brought from a cold place to a warm place, and there is a large temperature difference.
- When a heater starts operating.
- When the unit is brought from an air-conditioned place to a place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and the ambient temperature, or in conditions where condensation occurs easily.

CONTROLS


Playing TRACK NO. display
REPEAT indicator
CCRS indicator
EDIT mode indicators
Program Check indicator
SINGLE TIME/TOTAL TIME indicators
Play mode indicators
SPACE indicator
TRACK
PGM
SPACE
CCRS
EDIT
AI EDIT
A B
TRACK NO.
REPEAT
P.C.
SINGLE TOTAL
TIME TIME
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
Track number indicators
Pause indicator
Play indicator
Time display
Display
KENWOOD COMPACT DISC PLAYER DP-F7
1 BIT DUAL D/A CONVERTER
EDIT MODE
SPACE
TIME
P.MODE
REPEAT
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿

❶ **Disc tray**

❷ **EDIT MODE key**
Press to select the edit recording mode.

❸ **TIME key**
Press to switch the time display mode.

❹ **SPACE key**
Press in PGM mode to create a non-recorded space of a few seconds between recorded tracks automatically.

❺ **P.MODE key**
Press to switch between the TRACK mode and PGM mode.

❻ **REPEAT key**
Press for repeated playback.

❼ **Open/Close key**

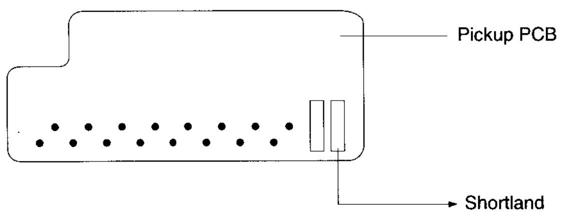
❽ **Stop key**

❾ **Play/pause key**

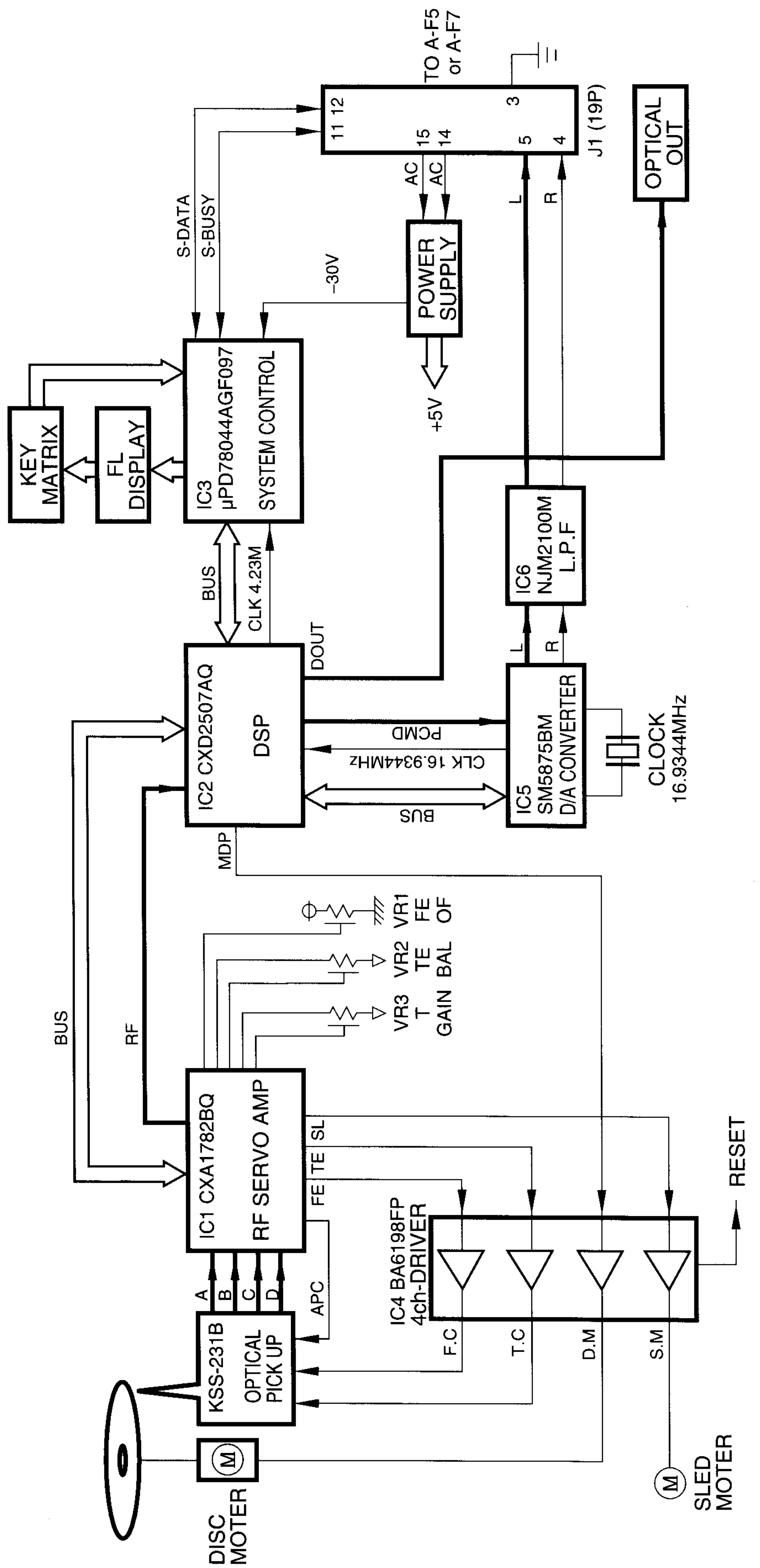
❿ **Skip keys**
Press to skip to the beginning of another track.

DISASSEMBLY FOR REPAIR

- Refer to the Service Manual of DP-1001 (P.4~5).
- When removing CN1, short the shortland.


Pickup PCB
Shortland

BLOCK DIAGRAM


TO A-F5 or A-F7
11 12
15 14
3
5 4
J1 (19P)
OPTICAL OUT
AC AC
L R
S-DATA
S-BUSY
-30V
POWER SUPPLY
+5V
KEY MATRIX
FL DISPLAY
IC3 µPD78044AGF097 SYSTEM CONTROL
IC6 NJM2100M L.P.F
BUS
CLK 4.23M
DOUT
L R
IC2 CXD2507AQ DSP
PCMD
CLK 16.9344MHz
BUS
IC5 SM5875BM D/A CONVERTER
CLOCK 16.9344MHz
MDP
VR1 FE OF
VR2 TE BAL
VR3 T GAIN
BUS
RF
IC1 CXA1782BQ RF SERVO AMP
SL
TE
FE
APC
A B C D
IC4 BA6198FP 4ch-DRIVER
RESET
F.C
T.C
D.M
S.M
KSS-231B OPTICAL PICK UP
DISC MOTER
SLED MOTER

1. Test mode

1-1 Setting the test mode

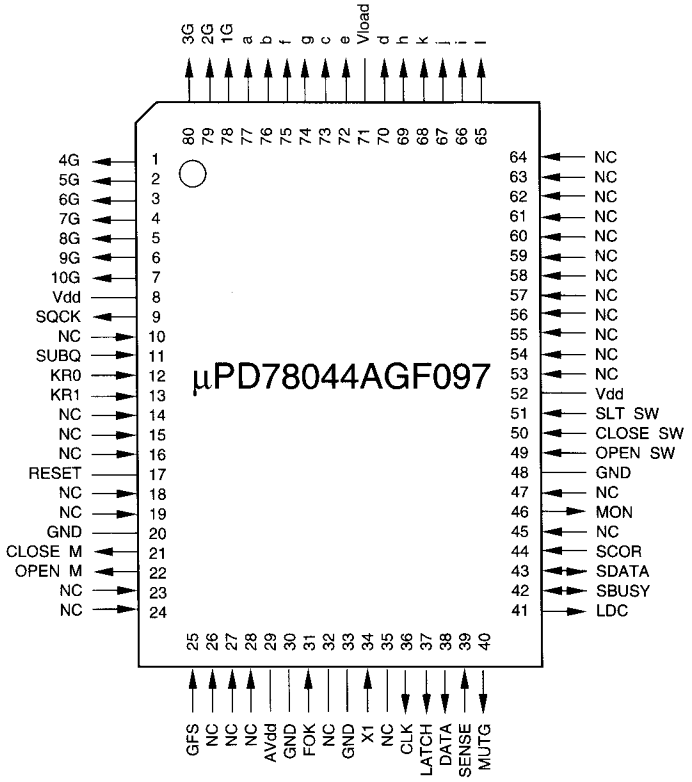
- The microprocessor built in the unit can be put to TEST MODE by just pressing the EDIT MODE key when set to power on.

1-2 Key vs Function in test mode

Step	Key name	Description	Display
1	PLAY	(1) Focus servo..ON (2) Tracking servo......................................ON (3) Feed servo...ON	05
2	STOP	STOP	00
3	UP	Display goes on/off	
4	DOWN	(1) Focus servo..ON (2) Tracking servo......................................OFF (3) Feed servo...OFF	03
5	OPEN/CLOSE	Open or close the tray.	00
6	POWER OFF	Release the TEST MODE.	

2. Microprocessor : µPD78044AGF097 (X32- , IC3)

2-1 Pin connection


3G
2G
1G
a
b
f
g
c
e
Vload
d
h
k
j
i
l
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
4G 1
5G 2
6G 3
7G 4
8G 5
9G 6
10G 7
Vdd 8
SQCK 9
NC 10
SUBQ 11
KR0 12
KR1 13
NC 14
NC 15
NC 16
RESET 17
NC 18
NC 19
GND 20
CLOSE M 21
OPEN M 22
NC 23
NC 24
µPD78044AGF097
64 NC
63 NC
62 NC
61 NC
60 NC
59 NC
58 NC
57 NC
56 NC
55 NC
54 NC
53 NC
52 Vdd
51 SLT SW
50 CLOSE SW
49 OPEN SW
48 GND
47 NC
46 MON
45 NC
44 SCOR
43 SDATA
42 SBUSY
41 LDC
25 GFS
26 NC
27 NC
28 NC
29 AVdd
30 GND
31 FOK
32 NC
33 GND
34 X1
35 NC
36 CLK
37 LATCH
38 DATA
39 SENSE
40 MUTG

Key matrix

	KR0	KR1
SCAN0	SPACE	P-MODE
SCAN1	EDIT	TIME
SCAN2	REPEAT	PLAY/PAUSE
SCAN3	UP	STOP
SCAN4	DOWN	OPEN/CLOSE

2-2 Pin description

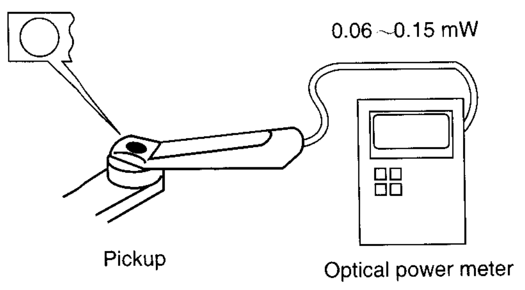
No.	Name	I/O	Description	No.	Name	I/O	Description
1	4G	O	FL grid 4	41	LDC	O	Laser signal output
2	5G	O	FL grid 5	42	SBUSY	I/O	Serial communication BUSY
3	6G	O	FL grid 6	43	SDATA	I/O	Serial communication DATA
4	7G	O	FL grid 7	44	SCOR	I	Sub-cord synchro detection
5	8G	O	FL grid 8	45	—	I	Not used
6	9G	O	FL grid 9	46	MON	O	Focus lock counter measure
7	10G	O	FL grid 10	47	—	I	Not used
8	Vdd	–	Power supply(+5V)	48	—	–	Not used
9	SQCK	O	CXD2507 Q-data read clock output	49	OPEN SW	I	Open switch input
10	—	I	Not used	50	CLOSE SW	I	Close switch input
11	SUBQ	I	CXD2507AQ Q-data input	51	SLT SW	I	Start limit switch input
12	KR0	I	Key return 0	52	Vdd	–	Power supply (+5V)
13	KR1	I	Key return 1	53	—	I	Not used
14	—	I	Not used	54	—	I	Not used
15	—	I	Not used	55	—	I	Not used
16	—	I	Not used	56	—	I	Not used
17	RESET	–	Reset	57	—	I	Not used
18	—	I	Not used	58	—	I	Not used
19	—	I	Not used	59	—	I	Not used
20	—	–	Not used	60	—	I	Not used
21	CLOSE M	O	Close motor control	61	—	I	Not used
22	OPEN M	O	Open motor control	62	—	I	Not used
23	—	I	Not used	63	—	I	Not used
24	—	I	Not used	64	—	I	Not used
25	GFS	I	CXD2507 GFS detection	65	l	O	FL segment l
26	—	I	Not used	66	i	O	FL segment i
27	—	I	Not used	67	j	O	FL segment j
28	—	I	Not used	68	k	O	FL segment k
29	—	–	Not used	69	h	O	FL segment h
30	—	–	Not used	70	d	O	FL segment d
31	FOK	I	FOK detection	71	—	–	−30V power supply for FL driver
32	—	–	Not used	72	e	O	FL segment e
33	Vss	–	GND	73	c	O	FL segment c / Key scan 4
34	X1	I	System clock input	74	g	O	FL segment g / Key scan 3
35	—	–	Not used	75	f	O	FL segment f / Key scan 2
36	CLK	O	CXD2507 clock output	76	b	O	FL segment b / Key scan 1
37	LATCH	O	CXD2507 latch output	77	a	O	FL segment a / Key scan 0
38	DATA	O	CXD2507 DATA output	78	1G	O	FL grid 1
39	SENSE	I	CXD2507 SENSE input	79	2G	O	FL grid 2
40	MUTG	O	Digital mute control	80	3G	O	FL grid 3

ADJUSTMENT

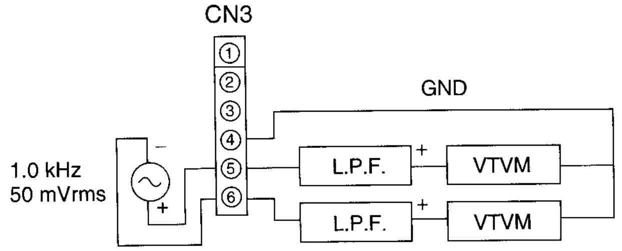
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	LASER POWER	–	Apply the sensor section of optical power meter on the pickup lens.	While pressing the EDIT key, turn the AC ON. (Test mode) Press the DOWN key, then confirm that the display is "03".	–	On the power from 0.06 to 0.15 mW (When the diffraction grating is correctly aligned with the RF level of 1.0 Vp-p or more and the TE (servo open) level of 0.6 Vp-p or more, the pickup is acceptable.)	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1:RF (CN3 pin 1) CH2:TE (CN3 pin 6)	Set the unit to test mode. Load the test disc. Press the DOWN key, then confirm that the display is "03".	TE BALANCE VR2	Symmetry between upper and lower patterns	(c)
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1:RF (CN3 pin 1) CH2:TE (CN3 pin 6)	Set the unit to test mode. Press the PLAY key, then confirm that the display is "05".	FE BALANCE VR1	Optimum eye pattern	(d)
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0 kHz, 50mVrms to CN3 pin 5-6.	Connect a LPF to CN3 pin 5-6 to which you connect an oscilloscope or AC voltmeters.	Set the unit to test mode. Press the PLAY key, then confirm that the display is "05".	TRACKING GAIN VR3	Two VTVMs should read the same value.	(e)

Note:
Type 4 disc : SONY YEDS-18 Test Disc or equivalent.
LPF: Around 47 kΩ+ 390 pF or so.
Step 1~4 are in Test Mode.

(a) Laser power

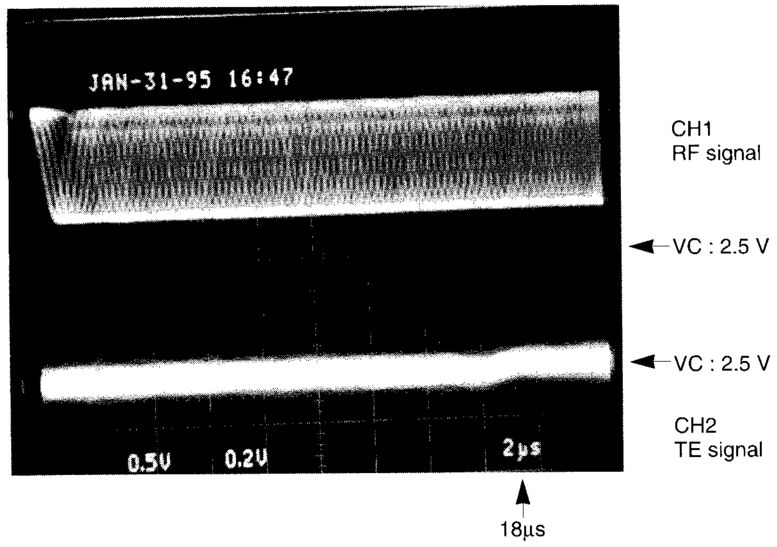


(e) Tracking gain



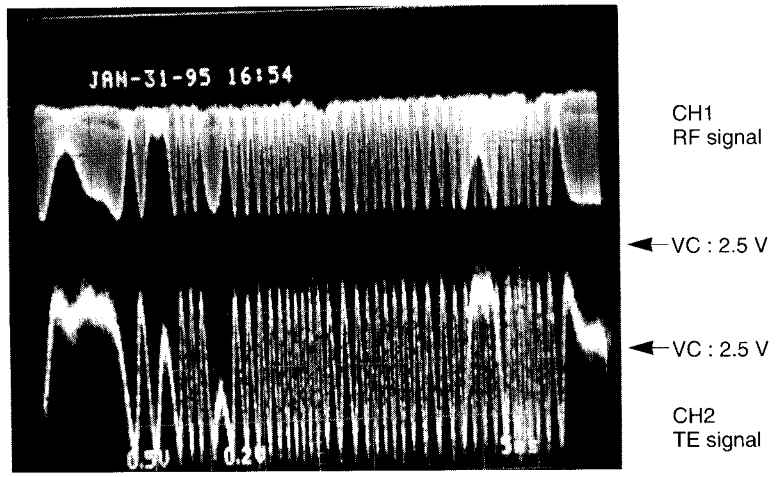
ADJUSTMENT

FIG. (b)



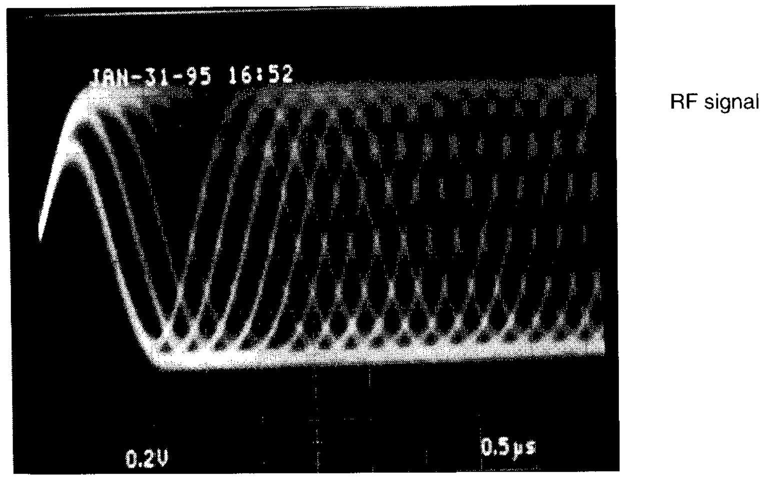
- RF signal and TE signal in test mode (PLAY).
- If the diffraction grating has been adjusted correctly, the influence of triggering is observed on the TE waveform of approx. 18μs from RF signal trigger point, in the form of a projection.

FIG. (c)



- RF signal and TE signal in test mode (Focusing servo ON / Tracking servo OFF). (Disc Type 4)
- Adjust TE signal so that the waveform is symmetrical in relation to VC. (TE BALANCE)

FIG. (d)

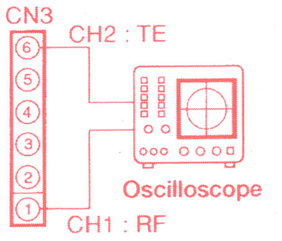


- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be looked clearly. (FE BALANCE)

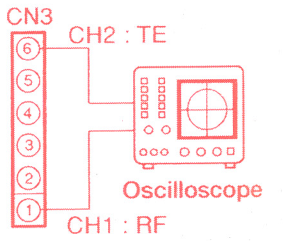
PC BOARD(COMPONENT SIDE VIEW)

CD Player unit (X32-2932-70)

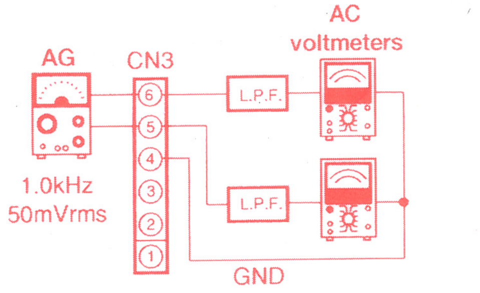
(c) Tracking error balance
: Symmetry between upper and lower patterns

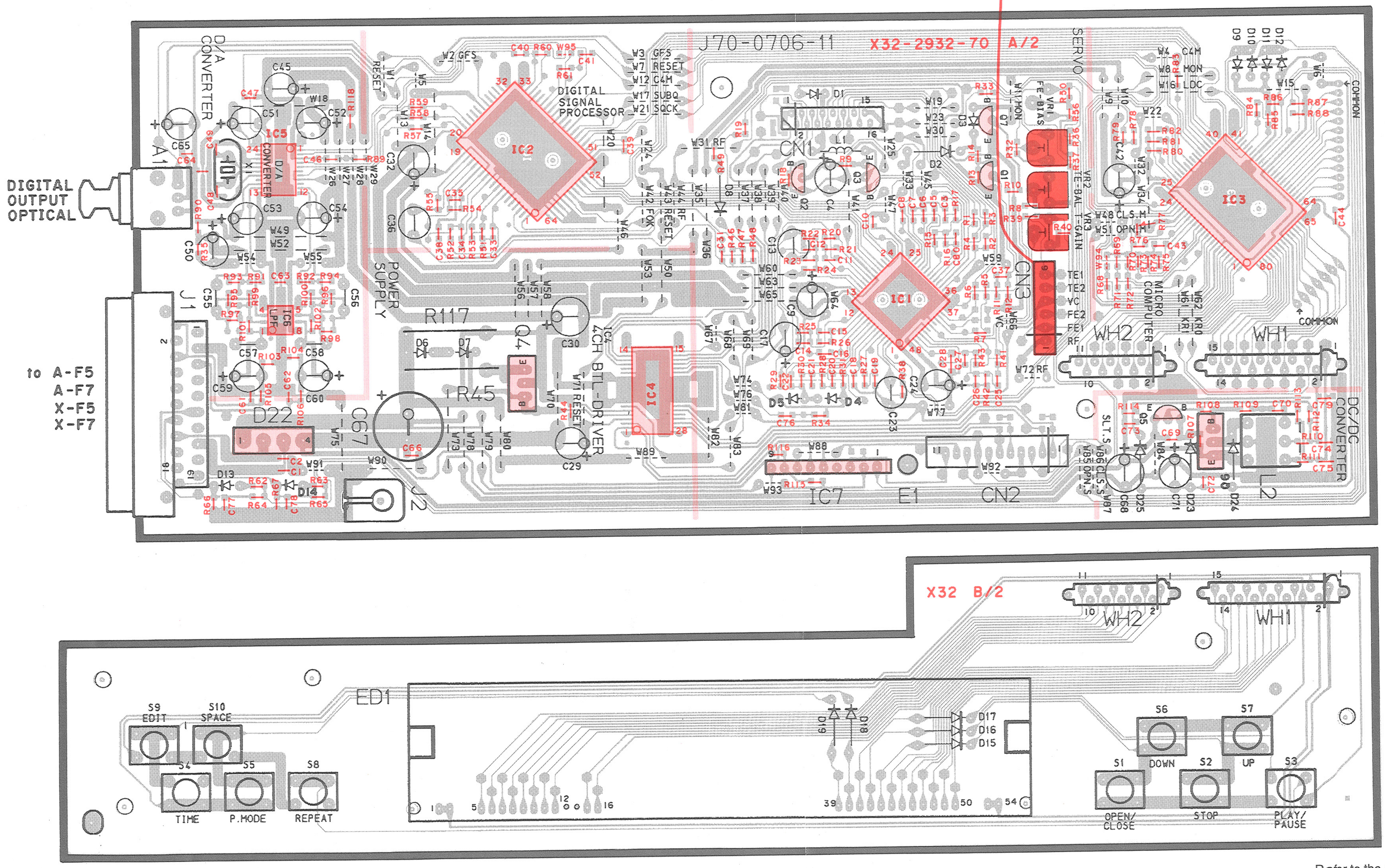

CN3
6
5
4
3
2
1
CH2 : TE
Oscilloscope
CH1 : RF

(d) Focus error balance
: Optimum eye pattern

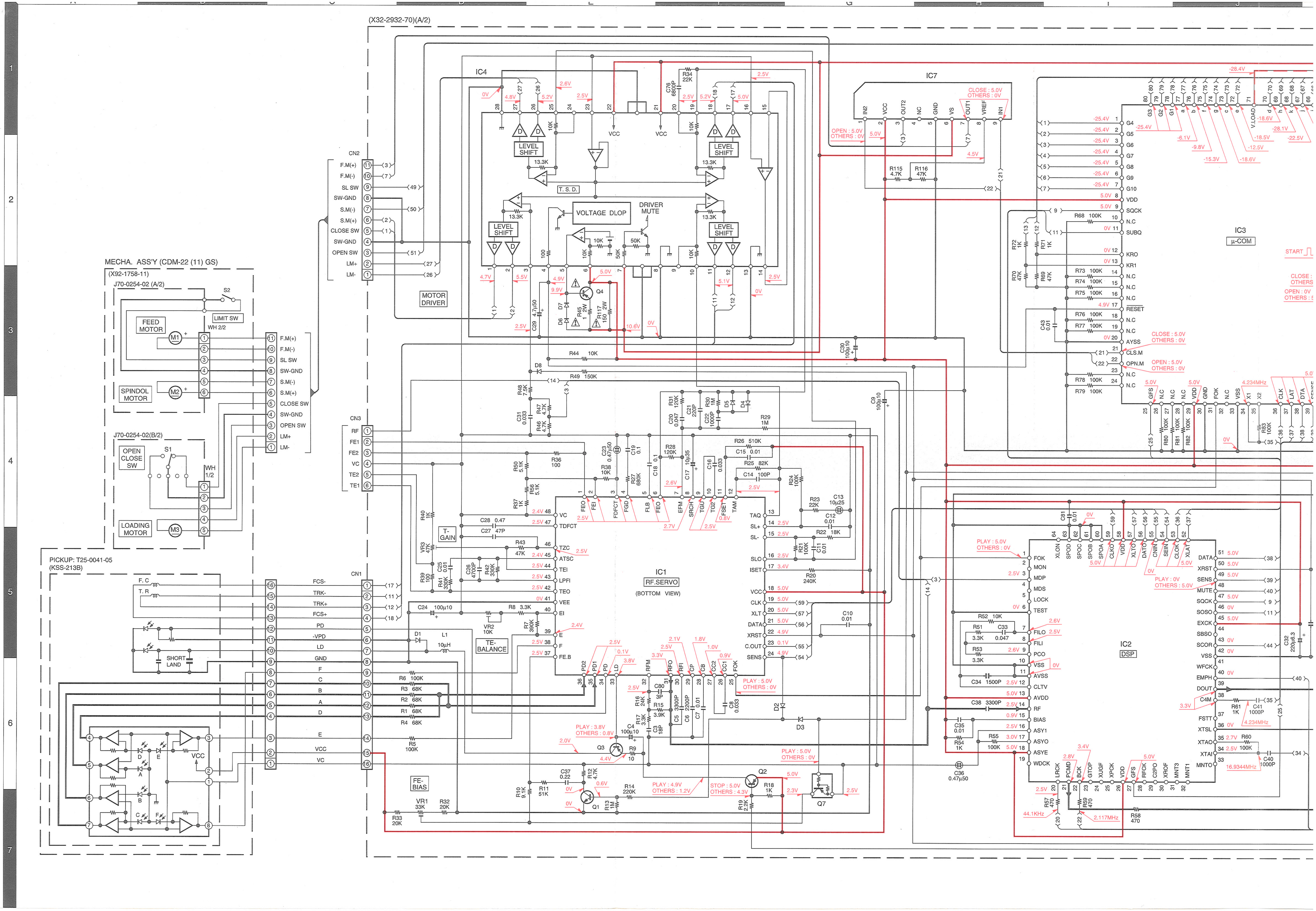

CN3
6
5
4
3
2
1
CH2 : TE
Oscilloscope
CH1 : RF

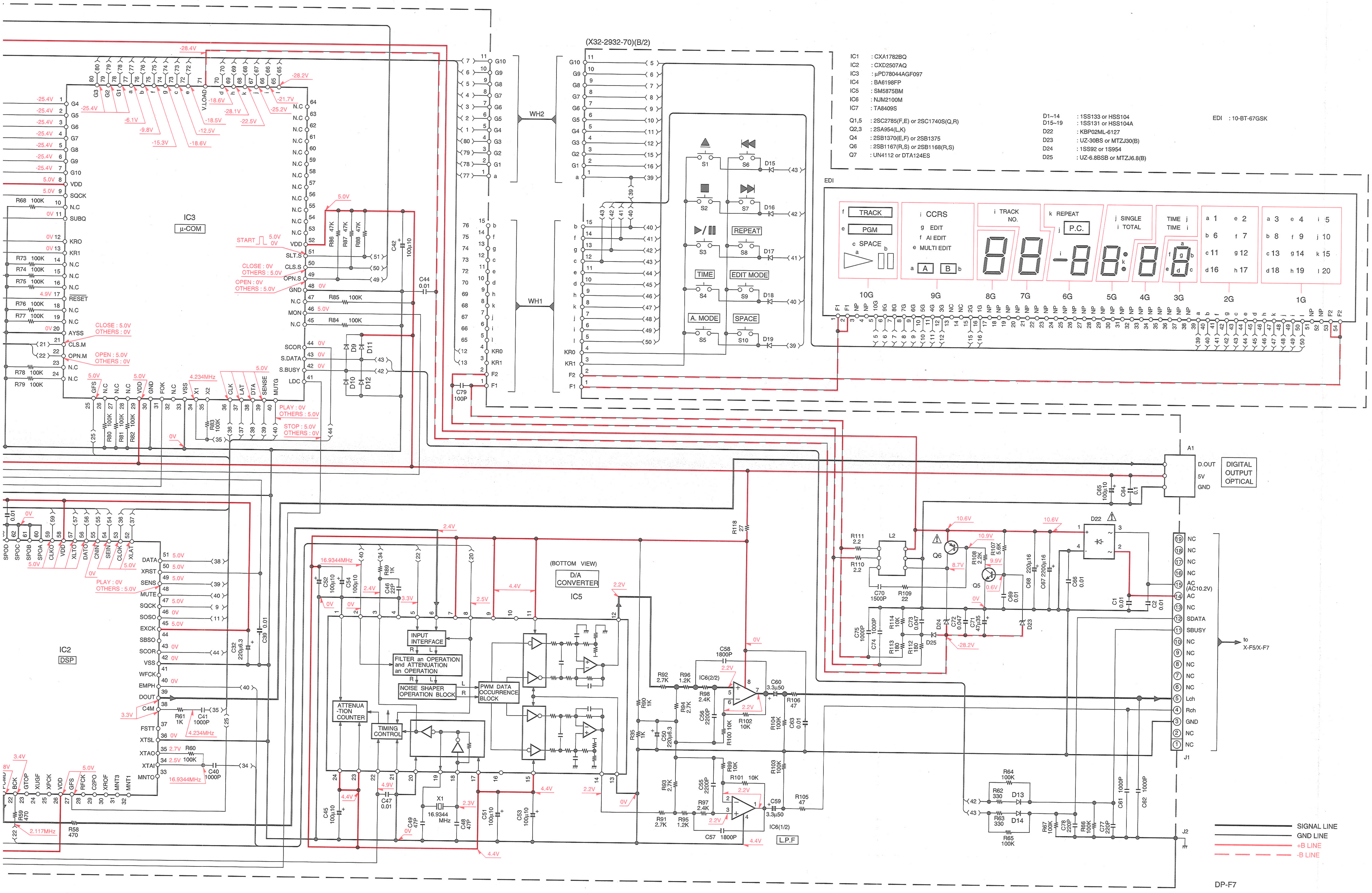
(e) Tracking gain :
Two VTVMs should read the same value.


AC voltmeters
AG
CN3
6
5
4
3
2
1
L.P.F.
L.P.F.
1.0kHz
50mVrms
GND


DIGITAL OUTPUT OPTICAL
to A-F5
A-F7
X-F5
X-F7
D/A CONVERTER
J70-0706-11
X32-2932-70 A/2
SERVO
DIGITAL SIGNAL PROCESSOR
IC1
IC2
IC3
IC4
IC5
IC6
IC7
CN1
CN2
CN3
E1
J1
J2
A1
D22
C67
R45
R117
POWER SUPPLY
4CH BTL DRIVER
MICRO COMPUTER
DC/DC CONVERTER
LPF
WH1
WH2
L2
COMMON
TE1
TE2
VC
FE2
FE1
RF
X32 B/2
ED1
S9 EDIT
S10 SPACE
S4 TIME
S5 P.MODE
S8 REPEAT
S1 OPEN/CLOSE
S6 DOWN
S2 STOP
S7 UP
S3 PLAY/PAUSE
D15
D16
D17
D18
D19

Refer to the schematic diagram for the value of resistors and capacitors.


(X32-2932-70)(A/2)
MECHA. ASS'Y (CDM-22 (11) GS)
(X92-1758-11)
J70-0254-02 (A/2)
J70-0254-02(B/2)
FEED MOTOR
SPINDOL MOTOR
LOADING MOTOR
OPEN CLOSE SW
LIMIT SW
WH 2/2
WH 1/2
S1
S2
M1
M2
M3
PICKUP: T25-0041-05
(KSS-213B)
F.C
T.R
SHORT LAND
VCC
CN1
CN2
CN3
F.M(+)
F.M(-)
SL SW
SW-GND
S.M(-)
S.M(+)
CLOSE SW
OPEN SW
LM+
LM-
RF
FE1
FE2
VC
TE2
TE1
FCS-
TRK-
TRK+
FCS+
PD
-VPD
LD
GND
F
C
B
A
D
E
VCC
VC
IC4
MOTOR DRIVER
LEVEL SHIFT
T. S. D.
VOLTAGE DLOP
DRIVER MUTE
Q4
IC1
RF.SERVO
(BOTTOM VIEW)
T-GAIN
TE-BALANCE
FE-BIAS
Q1
Q2
Q3
Q7
D1
D2
D3
L1
VR1
VR2
VR3
IC7
IN2
VCC
OUT2
NC
GND
VS
OUT1
VREF
IN1
CLOSE : 5.0V OTHERS : 0V
OPEN : 5.0V OTHERS : 0V
IC2
DSP
IC3
µ-COM
START
PLAY : 5.0V OTHERS : 0V
PLAY : 3.8V OTHERS : 0.8V
PLAY : 4.9V OTHERS : 1.2V
STOP : 5.0V OTHERS : 4.3V
PLAY : 0V OTHERS : 5.0V
4.234MHz
16.9344MHz
2.117MHz
44.1KHz


IC3
µ-COM
IC2
DSP
IC5
D/A CONVERTER
(BOTTOM VIEW)
INPUT INTERFACE
FILTER an OPERATION and ATTENUATION an OPERATION
NOISE SHAPER OPERATION BLOCK
PWM DATA OCCURRENCE BLOCK
ATTENUATION COUNTER
TIMING CONTROL
IC6(2/2)
IC6(1/2)
L.P.F
(X32-2932-70)(B/2)
WH2
WH1
EDI
A1
DIGITAL OUTPUT OPTICAL
D.OUT
5V
GND
J1
J2
to X-F5/X-F7
TRACK
PGM
CCRS
EDIT
AI EDIT
MULTI EDIT
SPACE
TRACK NO.
REPEAT
P.C.
SINGLE
TOTAL
TIME
REPEAT
EDIT MODE
TIME
A. MODE
SPACE
X1 16.9344 MHz
16.9344MHz
4.234MHz
2.117MHz
START
CLOSE : 0V OTHERS : 5.0V
OPEN : 0V OTHERS : 5.0V
PLAY : 0V OTHERS : 5.0V
STOP : 5.0V OTHERS : 0V

IC1 : CXA1782BQ
IC2 : CXD2507AQ
IC3 : µPD78044AGF097
IC4 : BA6198FP
IC5 : SM5875BM
IC6 : NJM2100M
IC7 : TA8409S

Q1,5 : 2SC2785(F,E) or 2SC1740S(Q,R)
Q2,3 : 2SA954(L,K)
Q4 : 2SB1370(E,F) or 2SB1375
Q6 : 2SB1167(R,S) or 2SB1168(R,S)
Q7 : UN4112 or DTA124ES

D1~14 : 1SS133 or HSS104
D15~19 : 1SS131 or HSS104A
D22 : KBP02ML-6127
D23 : UZ-30BS or MTZJ30(B)
D24 : 1SS92 or 1S954
D25 : UZ-6.8BSB or MTZJ6.8(B)

EDI : 10-BT-67GSK

SIGNAL LINE
GND LINE
+B LINE
-B LINE

DP-F7

Y22-420

2S
2S
TA8
CX

CAUTION
manufact
compone
measure
from the

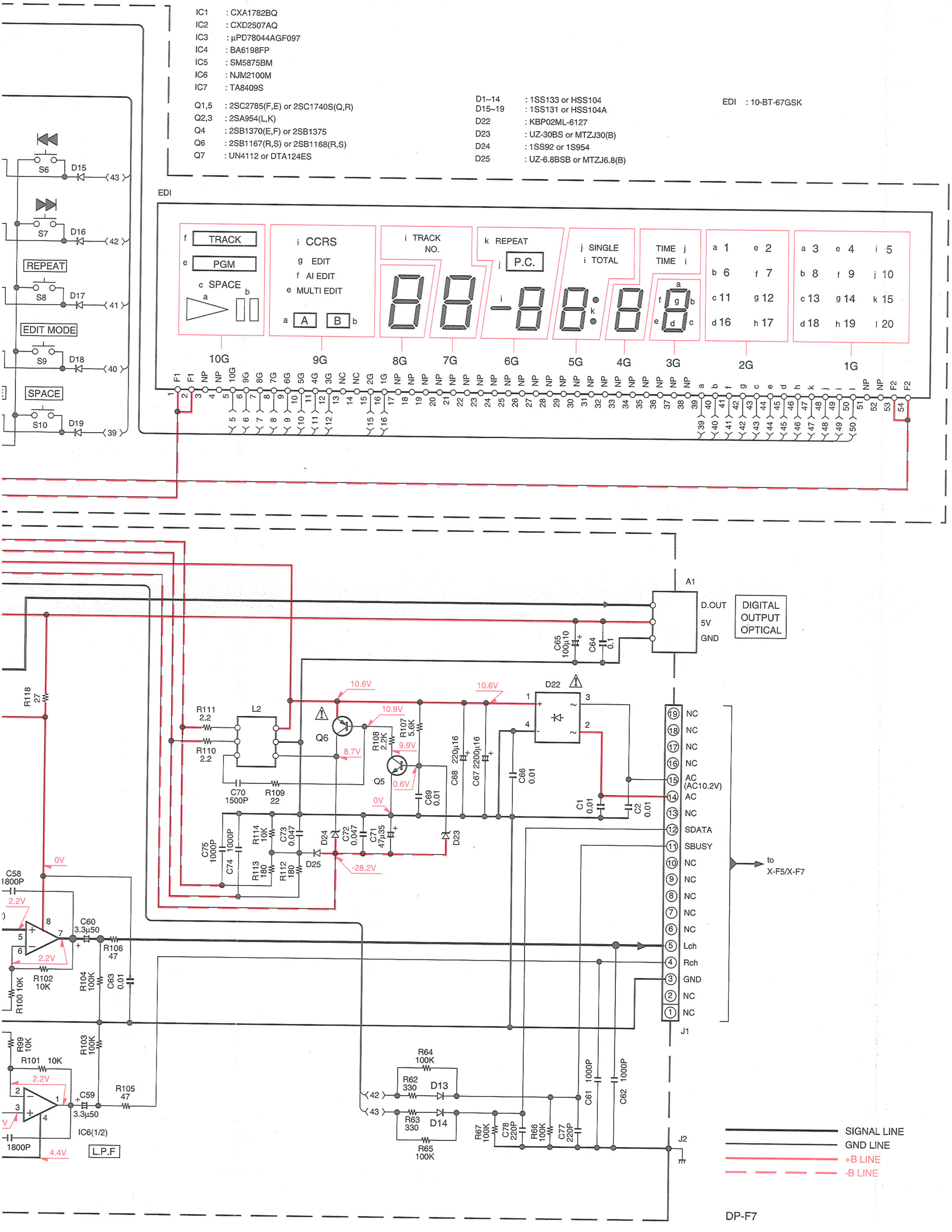
• DC vo
vary sl

IC1 : CXA1782BQ
IC2 : CXD2507AQ
IC3 : µPD78044AGF097
IC4 : BA6198FP
IC5 : SM5875BM
IC6 : NJM2100M
IC7 : TA8409S

Q1,5 : 2SC2785(F,E) or 2SC1740S(Q,R)
Q2,3 : 2SA954(L,K)
Q4 : 2SB1370(E,F) or 2SB1375
Q6 : 2SB1167(R,S) or 2SB1168(R,S)
Q7 : UN4112 or DTA124ES

D1~14 : 1SS133 or HSS104
D15~19 : 1SS131 or HSS104A
D22 : KBP02ML-6127
D23 : UZ-30BS or MTZJ30(B)
D24 : 1SS92 or 1S954
D25 : UZ-6.8BSB or MTZJ6.8(B)

EDI : 10-BT-67GSK


S6
D15
43
S7
D16
42
REPEAT
S8
D17
41
EDIT MODE
S9
D18
40
SPACE
S10
D19
39
EDI
f TRACK
e PGM
c SPACE
a b
i CCRS
g EDIT
f AI EDIT
e MULTI EDIT
a A B b
i TRACK NO.
k REPEAT
j P.C.
j SINGLE
i TOTAL
TIME j
TIME i
a 1 e 2
b 6 f 7
c 11 g 12
d 16 h 17
a 3 e 4 i 5
b 8 f 9 j 10
c 13 g 14 k 15
d 18 h 19 l 20
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
F1 F1 NP NP 10G 9G 8G 7G 6G 5G 4G 3G NC NC 2G 1G NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP NP a b f g c e d h k j i l NP NP F2 F2
A1
D.OUT
5V
GND
DIGITAL OUTPUT OPTICAL
C65 100µ10
C64 0.1
R118 27
R111 2.2
L2
R110 2.2
C70 1500P
R109 22
10.6V
10.9V
8.7V
9.9V
0.6V
0V
Q6
Q5
R108 2.2K
R107 5.6K
C68 220µ16
C67 2200µ16
C69 0.01
C66 0.01
D22
C1 0.01
C2 0.01
C75 1000P
C74 1000P
R114 10K
R113 180
C73 0.047
R112 180
D24
D25
C72 0.047
C71 47µ35
D23
-28.2V
19 NC
18 NC
17 NC
16 NC
15 AC (AC10.2V)
14 AC
13 NC
12 SDATA
11 SBUSY
10 NC
9 NC
8 NC
7 NC
6 NC
5 Lch
4 Rch
3 GND
2 NC
1 NC
J1
to X-F5/X-F7
C58 1800P
0V
2.2V
C60 3.3µ50
R106 47
R102 10K
R104 100K
C63 0.01
R100 10K
R99 10K
R103 100K
R101 10K
2.2V
C59 3.3µ50
R105 47
IC6(1/2)
1800P
4.4V
L.P.F
R64 100K
R62 330
D13
42
43
R63 330
D14
R65 100K
R67 100K
C78 220P
R66 100K
C77 220P
C61 1000P
C62 1000P
J2
SIGNAL LINE
GND LINE
+B LINE
-B LINE

DP-F7

2S

2SI

TA8

CXA

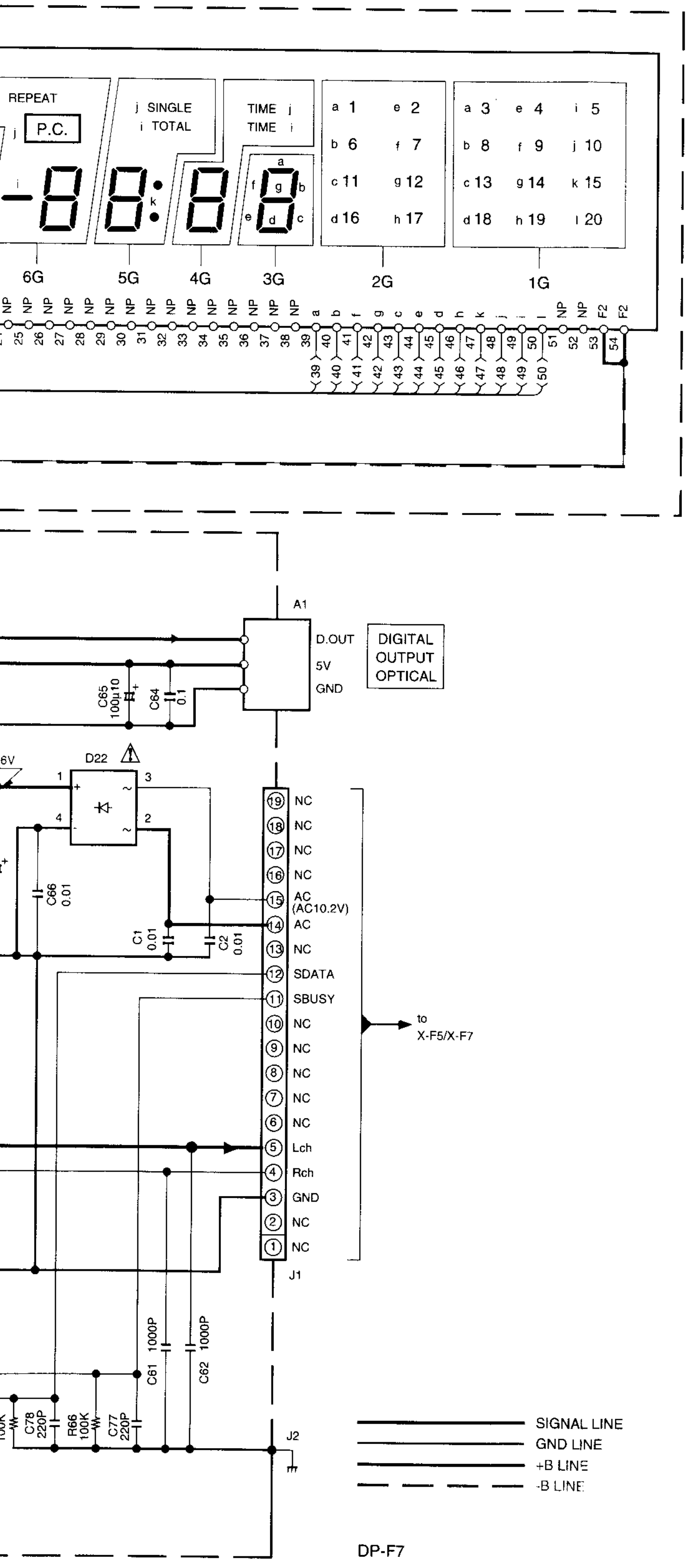
CAUTION
manufact
compone
measurem
from the s

• DC vo
vary sl

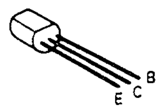
Y22-420

14 : 1SS133 or HSS104
~19 : 1SS131 or HSS104A
: KBP02ML-6127
: UZ-30BS or MTZJ30(B)
: 1SS92 or 1S954
: UZ-6.8BSB or MTZJ6.8(B)

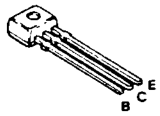
EDI : 10-BT-67GSK


REPEAT
P.C.
j SINGLE
i TOTAL
TIME j
TIME i
a 1 e 2
b 6 f 7
c 11 g 12
d 16 h 17
a 3 e 4 i 5
b 8 f 9 j 10
c 13 g 14 k 15
d 18 h 19 l 20
6G
5G
4G
3G
2G
1G
NP
F2
A1
D.OUT
5V
GND
DIGITAL OUTPUT OPTICAL
C65 100μ10
C64 0.1
6V
D22
C66 0.01
C1 0.01
C2 0.01
NC
AC (AC10.2V)
AC
SDATA
SBUSY
Lch
Rch
GND
to X-F5/X-F7
J1
C81 1000P
C62 1000P
C78 220P
R66 100K
C77 220P
J2
SIGNAL LINE
GND LINE
+B LINE
-B LINE
DP-F7

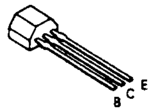
2SA954



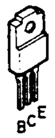
2SC2785



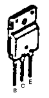
DTA124ES
UN4112
2SC1740S



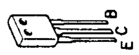
2SB1370



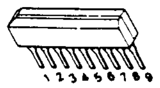
2SB1375



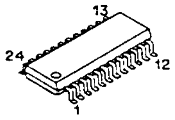
2SB1167
2SB1168



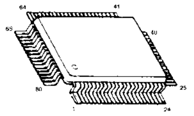
TA8409S



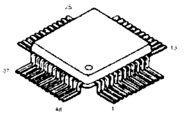
SM5875BM



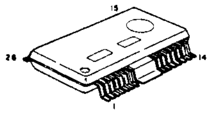
UPD78044AGF097



CXA1782BQ



BA6198FP

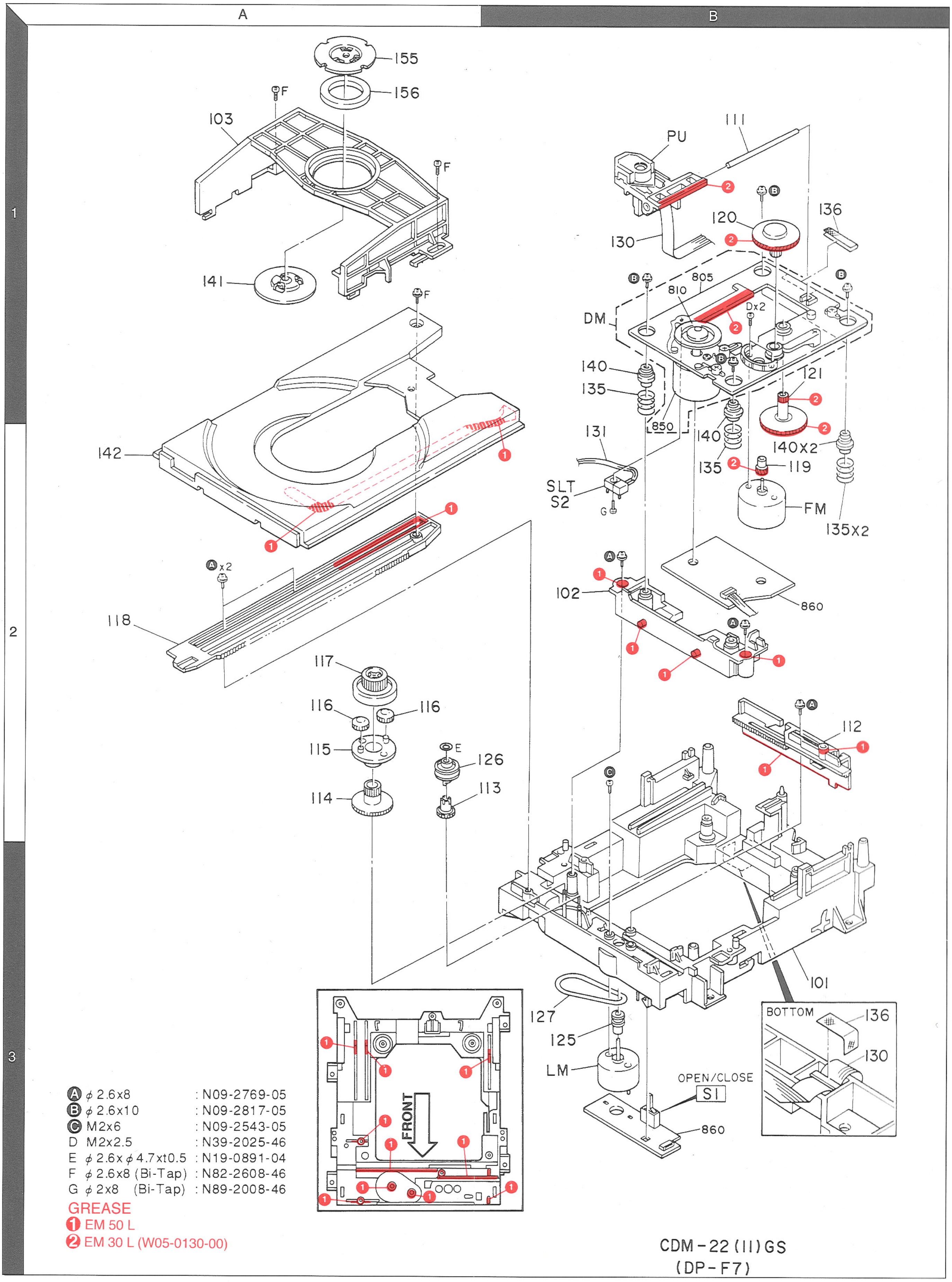


CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

DP-F7
KENWOOD

EXPLODED VIEW (MECHANISM)


A
B
1
2
3
155
156
F
103
F
141
F
142
A x2
118
117
116
116
115
E
126
113
114
PU
111
130
120
B
136
B
805
810
B
DM
Dx2
B
140
135
121
850
131
140
135
140X2
119
SLT
S2
G
FM
135X2
860
A
102
A
A
112
C
101
127
125
LM
OPEN/CLOSE
S1
860
BOTTOM
136
130
FRONT
1
2

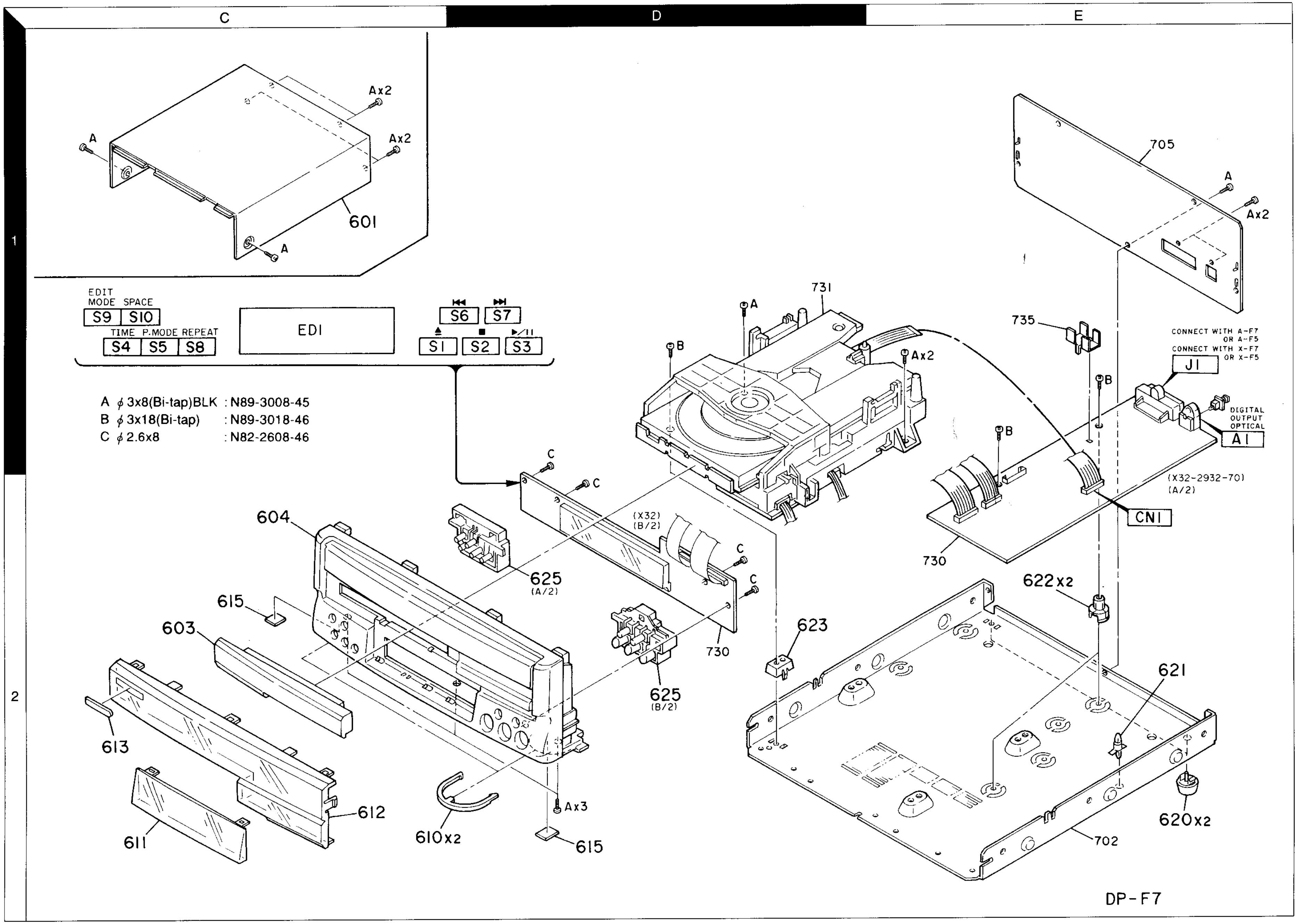
Ⓐ φ 2.6x8 : N09-2769-05
Ⓑ φ 2.6x10 : N09-2817-05
Ⓒ M2x6 : N09-2543-05
D M2x2.5 : N39-2025-46
E φ 2.6x φ 4.7xt0.5 : N19-0891-04
F φ 2.6x8 (Bi-Tap) : N82-2608-46
G φ 2x8 (Bi-Tap) : N89-2008-46

GREASE
① EM 50 L
② EM 30 L (W05-0130-00)

CDM-22 (11) GS
(DP-F7)

Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)


C
D
E
1
2
601
Ax2
Ax2
A
A
EDIT MODE
SPACE
S9
S10
TIME
P.MODE
REPEAT
S4
S5
S8
EDI
S6
S7
S1
S2
S3
731
A
B
Ax2
735
B
B
705
A
Ax2
CONNECT WITH A-F7 OR A-F5
CONNECT WITH X-F7 OR X-F5
J1
DIGITAL OUTPUT OPTICAL
A1
(X32-2932-70) (A/2)
CN1
730
C
C
(X32) (B/2)
C
C
604
625 (A/2)
615
603
730
625 (B/2)
623
622x2
621
613
612
611
610x2
Ax3
615
620x2
702
DP-F7

A ϕ 3x8(Bi-tap)BLK : N89-3008-45
B ϕ 3x18(Bi-tap) : N89-3018-46
C ϕ 2.6x8 : N82-2608-46

Parts with the exploded numbers larger than 700 are not supplied.

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❶

Ref. No.	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
				DP-F7		
601	1C		A01-3227-01	METALLIC CABINET		
603	2C	*	A29-0394-03	PANEL		
604	2C	*	A60-0715-11	PANEL		
610	2C		B07-2268-14	ESCUTCHEON		
611	2C		B10-2097-03	FRONT GLASS		
612	2C	*	B10-2098-02	FRONT GLASS		
613	2C		B43-0301-04	KENWOOD BADGE		
-			B46-0310-03	WARRANTY CARD	EGT	
615	2C,2D		G11-2231-14	CUSHION		
		*	H50-1481-04	ITEM CARTON CASE	EGT	S
		*	H50-1524-04	ITEM CARTON CASE	EGT	W
		*	H50-1525-04	ITEM CARTON CASE	M	S
		*	H50-1540-04	ITEM CARTON CASE	M	W
-			H10-7007-02	POLYSTYRENE FOAMED FIXTURE (L)		S
-			H10-7008-02	POLYSTYRENE FOAMED FIXTURE (R)		S
-			H10-7009-02	POLYSTYRENE FOAMED FIXTURE (L)		W
-			H10-7010-02	POLYSTYRENE FOAMED FIXTURE (R)		W
-			H20-0576-04	PROTECTION COVER	M	
-			H25-0681-04	PROTECTION BAG	EGT	
620	2E		J02-0366-15	FOOT		
621	2E		J19-3325-05	UNIT HOLDER		
622	2E	*	J19-3751-04	UNIT HOLDER		
623	2D	*	J19-3757-04	HOLDER		
625	2D	*	K29-6113-03	KNOB		
				CD PLAYER UNIT (X32-2932-70)		
C1,2			CK73FB1H103K	CHIP C 0.010UF K		
C3			CC73FSL1H180J	CHIP C 18PF J		
C4			CE04LW1A101M	ELECTRO 100UF 10WV		
C5			CK73FB1H332K	CHIP C 3300PF K		
C6			CK73FB1H222K	CHIP C 2200PF K		
C7			CK73FB1H103K	CHIP C 0.010UF K		
C8			CK73FB1H333K	CHIP C 0.033UF K		
C9			CE04LW1A101M	ELECTRO 100UF 10WV		
C10 -12			CK73FB1H103K	CHIP C 0.010UF K		
C13			CE04HW1E100M	NP-ELEC 10UF 25WV		
C14			CC73FSL1H101J	CHIP C 100PF J		
C15			CK73FB1H103K	CHIP C 0.010UF K		
C16			CK73FB1H333K	CHIP C 0.033UF K		
C17			CE04LW1V100M	ELECTRO 10UF 35WV		
C18 ,19			CK73FB1E104K	CHIP C 0.10UF K		
C20			CK73FB1H473K	CHIP C 0.047UF K		
C21			CC73FSL1H221J	CHIP C 220PF J		
C22			CK73FB1H102K	CHIP C 1000PF K		
C23			CE04HW1HR47M	NP-ELEC 0.47UF 50WV		
C24			CE04LW1A101M	ELECTRO 100UF 10WV		
C25			CK73FB1H103K	CHIP C 0.010UF K		
C26			CK73FB1H472K	CHIP C 4700PF K		
C27			CC73FSL1H470J	CHIP C 47PF J		
C28			CK73EB1C474K	CHIP C 0.47UF K		
C29			CE04LW1H4R7M	ELECTRO 4.7UF 50WV		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico **S**:Singapore Made
Y:PX(Far East, Hawaii) **T**:England **E**:Europe **G**:Germany **W**:Malaysia Made
Y:AAFES(Europe) **X**:Australia **M**:Other Areas

⚠ indicates safety critical components.

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❷

Ref. No.	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
C30			CE04LW1A101M	ELECTRO 100UF 10WV		
C31			CK73FB1H333K	CHIP C 0.033UF K		
C32			CE04LW0J221M	ELECTRO 220UF 6.3WV		
C33			CK73FB1H473K	CHIP C 0.047UF K		
C34			CK73FB1H152K	CHIP C 1500PF K		
C35			CK73FB1H103K	CHIP C 0.010UF K		
C36			CE04HW1HR47M	NP-ELEC 0.47UF 50WV		
C37			CK73FB1C224K	CHIP C 0.22UF K		
C38			CK73FB1H332K	CHIP C 3300PF K		
C39			CK73FB1H103K	CHIP C 0.010UF K		
C40 ,41			CK73FB1H102K	CHIP C 1000PF K		
C42			CE04LW1A101M	ELECTRO 100UF 10WV		
C43 ,44			CK73FB1H103K	CHIP C 0.010UF K		
C45			CE04LW1A101M	ELECTRO 100UF 10WV		
C46			CC73FSL1H220J	CHIP C 22PF J		
C47			CK73FB1H103K	CHIP C 0.010UF K		
C48 ,49			CC73FSL1H470J	CHIP C 47PF J		
C50			CE04LW0J221M	ELECTRO 220UF 6.3WV		
C51 -54			CE04LW1A101M	ELECTRO 100UF 10WV		
C55 ,56			CF92FV1H222J	MF-C 2200PF J		
C57 ,58			CF92FV1H182J	MF-C 1800PF J		
C59 ,60			C90-1934-05	ELECTRO 3.3UF 50WV		
C61 ,62			CK73FB1H102K	CHIP C 1000PF K		
C63			CK73FB1H103K	CHIP C 0.010UF K		
C64			CK73FB1E104K	CHIP C 0.10UF K		
C65			CE04LW1A101M	ELECTRO 100UF 10WV		
C66			CK73FB1H103K	CHIP C 0.010UF K		
C67			CE04LW1C222M	ELECTRO 2200UF 16WV		
C68			CE04LW1C221M	ELECTRO 220UF 16WV		
C69			CK73FB1H103K	CHIP C 0.010UF K		
C70			CK73FB1H152K	CHIP C 1500PF K		
C71			CE04LW1V470M	ELECTRO 47UF 35WV		
C72 ,73			CK73FB1H473K	CHIP C 0.047UF K		
C74 ,75			CK73FB1H102K	CHIP C 1000PF K		
C76			CK73FB1H682K	CHIP C 6800PF K		
C77 ,78			CC73FSL1H221J	CHIP C 220PF J		
C79			CC73FSL1H101J	CHIP C 100PF J		
C80			CC73FCH1H030C	CHIP C 3.0PF C		
C81			CK73FB1H103K	CHIP C 0.010UF K		
CN1		*	E40-4856-05	FLAT CABLE CONNCTOR		
CN2			E40-3255-05	PIN ASSY		
CN3			E40-0611-05	PIN ASSY		
J1			E58-0006-05	RECTANGULAR RECEPTACLE (19P)		
-			J11-0098-05	WIRE CLAMPER		
L1			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L2			L19-0076-05	TRANSFORMER FOR CONVERTER		
X1			L77-1164-05	CRYSTAL RESONATOR(16.9344MHZ)		
⚠ R45			RS14KB3D1R0J	FL-PROOF RS 1.0 J 2W		
⚠ R117			RS14KB3D151J	FL-PROOF RS 150 J 2W		
VR1			R12-3687-05	TRIMMING POT.(33K) FE-BIAS		
VR2			R12-3685-05	TRIMMING POT.(10K) TE BALANCE		
VR3			R12-3688-05	TRIMMING POT.(47K) T-GAIN		
W94 ,95			R92-0670-05	CHIP R 0 OHM		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico **S**:Singapore Made
Y:PX(Far East, Hawaii) **T**:England **E**:Europe **G**:Germany **W**:Malaysia Made
Y:AAFES(Europe) **X**:Australia **M**:Other Areas

⚠ indicates safety critical components.

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❸

Ref. No.	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
S1-10			S40-1064-05	PUSH SWITCH		
D1-14			HSS104	DIODE		
D1-14			1SS133	DIODE		
D15 -19			HSS104A	DIODE		
D15 -19			1SS131	DIODE		
⚠ D22			KBP02ML-6127	DIODE		
D23			MTZJ30(B)	ZENER DIODE		
D23			UZ-30BS	ZENER DIODE		
D24			1SS92	DIODE		
D24			1S954	DIODE		
D25			MTZJ6.8(B)	ZENER DIODE		
D25			UZ-6.8BSB	ZENER DIODE		
ED1			10-BT-67GSK	INDICATOR TUBE		
IC1			CXA1782BQ	MOS-IC		
IC2			CXD2507AQ	MOS-IC		
IC3		*	UPD78044AGF097	MI-COM IC		
IC4			BA6198FP	ANALOGUE IC		
IC5			SM5875BM	MOS-IC		
IC6			NJM2100M	IC(OP AMPLIFIER)		
IC7			TA8409S	IC(MOTOR CONTROL)		
Q1			2SC1740S(Q,R)	TRANSISTOR		
Q1			2SC2785(F,E)	TRANSISTOR		
Q2,3			2SA954(L,K)	TRANSISTOR		
Q4			2SB1370(E,F)	TRANSISTOR		
Q4			2SB1375	TRANSISTOR		
Q5			2SC1740S(Q,R)	TRANSISTOR		
Q5			2SC2785(F,E)	TRANSISTOR		
⚠ Q6			2SB1167(R,S)	TRANSISTOR		
⚠ Q6			2SB1168(R,S)	TRANSISTOR		
Q7			DTA124ES	DIGITAL TRANSISTOR		
Q7			UN4112	TRANSISTOR		
A1			W02-1114-05	OSCILLATING MODULE D.OUT		
				MECHANISM (X92-1758-11)		
101	3B		A10-2974-21	CHASSIS(MAIN)		
102	2B		A11-0756-03	SUB CHASSIS(FRAME)		
103	1A		A11-0757-02	SUB CHASSIS(CLAMPER)		
DM	1B		A11-0733-05	SUB CHASSIS ASSY(DISC MOTOR)		
111	1B		D10-2490-04	ROD		
112	2B		D10-3253-03	SLIDER		
113	2B		D13-0975-04	GEAR(INTERMEDIATE)		
114	2A		D13-0976-03	GEAR(CENTER)		
115	2A		D13-0977-03	GEAR(CARRIER)		
116	2A		D13-0978-03	GEAR(IDLER)		
117	2A		D13-0979-03	GEAR(MAIN)		
118	2A		D13-0980-02	RACK(GEAR)		
119	2B		D13-0894-05	GEAR(MOTOR)		
120	1B		D13-0895-05	GEAR(INTERMEDIATE)		
121	1B		D13-0896-05	GEAR(FEED)		
125	3B		D15-0328-04	MOTOR PULLEY		
126	2B		D15-0329-03	PULLEY		
127	3B		D16-0333-03	BELT		
130	1B		E35-1131-05	FLAT CABLE (16P)		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico **S**:Singapore Made
Y:PX(Far East, Hawaii) **T**:England **E**:Europe **G**:Germany **W**:Malaysia Made
Y:AAFES(Europe) **X**:Australia **M**:Other Areas

⚠ indicates safety critical components.

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❹

Ref. No.	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
131	2B		E35-0420-05	LEAD WIRE		
135	1B,2B		G01-3326-14	COMPRESSION SPRING		
136	1B		G10-0146-04	NON-WOVEN FABRIC		
140	1B,2B		J02-1058-15	INSULATOR		
141	1A		J11-0180-03	CLAMPER		
142	2A		J99-0514-01	TRAY		
S1	3B		S33-2062-05	LEVER SWITCH(OPEN/CLOSE)		
S2	2B		S33-1022-05	LEVER SWITCH(SLT)		
155	1A		T50-1058-04	YOKE		
156	1A		T99-0503-15	MAGNET		
FM	2B		T42-0532-05	DC MOTOR(FEED MOTOR)		
LM	3B		T42-0609-05	DC MOTOR(LOADING MOTOR)		
PU	1B	*	T25-0041-05	OPTICAL PICKUP HEAD(KSS-213B)		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico **S**:Singapore Made
Y:PX(Far East, Hawaii) **T**:England **E**:Europe **G**:Germany **W**:Malaysia Made
Y:AAFES(Europe) **X**:Australia **M**:Other Areas

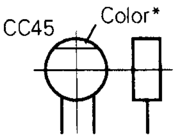
⚠ indicates safety critical components.

PARTS LIST

CAPACITORS

CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF

2 2 0 = 22pF
Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10μF – 10 ~ +50
							-20	-20	-0	Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word / 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	–

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
☐ ☐ ☐ ☐ ☐ ☐ ☐
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
☐ ☐ ☐ ☐ ☐ ☐ ☐
1 2 3 4 5 6 7
(Chip) (B, F)

☐ Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

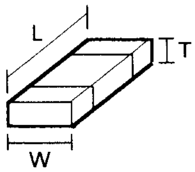
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
☐ ☐ ☐ ☐ ☐ ☐ ☐
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
☐ ☐ ☐ ☐ ☐ ☐ ☐
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

DP-F7

SPECIFICATIONS

Laser..Semiconductor laser
Playing rotation..............................200 rpm ~ 500 rpm (CLV)
Frequency response.........................8 Hz ~ 20 kHz, ± 1.0 dB
Signal to noise ratio ....More than 95 dB
Total harmonic distortion
.....................................Less than 0.007 % (at 1 kHz)
Channel separation .... More than 88 dB (at 1kHz)
Wow & Flutter...Unmeasurable Limit

[General]

Dimensions......................................W : 270 mm (10 - 5 / 8")
H : 104 mm (4 - 1 / 8")
D : 320 mm (12 - 5 / 8")
Weight (net)..2.2 kg (8.8 lb)

Note:
Component and circuity are subject to modification to insure best operation under differing local conditions. This manual is based on the General market (M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

INSTRUCTION MANUAL

UD-503/553

ENGLISH	B60-2059-00	KP
FRENCH	B60-2060-00	P
FRENCH	B60-2052-00	E
GERMAN	B60-2053-00	EG
DUTCH	B60-2054-00	E
ITALIAN	B60-2055-00	E
SPANISH	B60-2056-00	E
SPANISH	B60-2061-00	R

UD-703/753

ENGLISH	B60-2066-00	KPT
FRENCH	B60-2067-00	PE
GERMAN	B60-2068-00	EG
DUTCH	B60-2069-00	E
ITALIAN	B60-2070-00	E
SPANISH	B60-2071-00	RE
For RDS	B60-2074-00	TEG

UD-613/663

ENGLISH	B60-2051-00	YMX
SPANISH	B60-2261-00	M
CHINESE	B60-2057-00	M
TAIWANESE	B60-2058-00	M

UD-713/763

ENGLISH	B60-2259-00	YMX
SPANISH	B60-2260-00	M
CHINESE	B60-2072-00	M
TAIWANESE	B60-2073-00	M